Claims 1 to 13 are pending in this application of which only claim 1 and 13 are in independent form.

In paragraphs 2 and 3 of the action, the Office rejected claims 1, 2 and 9 to 13 as being anticipated by United States Patent 5,771,476 to Mufford et al (hereinafter "Mufford"). The applicants will now show that these claims patentably distinguish their invention over Mufford.

Mufford discloses a power control system, which controls the supply of a gas, such as air, for reaction within a fuel cell to power, for example, a motor vehicle. The air mass flow is hereby dependent on the speed (rpm) of the air compressor, which pushes air through the fuel cell. The compressor is provided with a control signal to control the speed of the compressor (column 4, line 59 to column 5, line 2). A PID-controller provides a desired value for the air mass flow at its output. The speed of the compressor is adjusted so that this desired value can be achieved. The desired value for the air mass flow is also adjusted in dependence upon the energy requirements of auxiliary power units. This yields a resulting desired value of the air mass flow which is used to control the rpm of the compressor. By means of this control, the actual value of the air mass flow is then updated in accordance with this desired value (column 5, lines 43 to 45, column 6, lines 12 and 13, column 6, lines 19 to 20, and column 6, lines 31 to 32).

To determine the desired value of the air mass flow, a look-up table is used. The table matches a measured current of a fuel cell with a value for the air mass flow. The desired value

for the air mass flow is compared to an actual value of the air mass flow, which is measured by the mass flow sensor (85). During this comparison, an error signal is produced, which is fed to the PID-controller (430). By controlling the speed of the compressor, the actual value of the air mass flow can be adjusted to the pregiven desired value (column 5, lines 19 to 45; column 7, lines 37 to 52).

The compressor speed is, via a look-up table, matched with a pressure. The so determined pressure is subsequently compared to the actual pressure measured by a pressure sensor in order to generate an error signal. This error signal is fed to a PID-controller (730). The output of the PID-controller (730) corrects the position of a step motor to set the desired pressure. The step motor, in turn, controls an air control valve in an exhaust tract of the fuel cell.

Claim 1 of the present invention requires:

> "A method for monitoring an air-mass measuring device in an air supply system of an internal combustion engine having an electrically-driven compressor, the method comprising the steps of:
> modeling an air mass flow in said air supply system in dependence upon an rpm of said compressor and a pressure ratio of said compressor to obtain a modeled air mass flow; and,
> comparing said modeled air mass flow to a measured air mass flow measured by said air-mass measuring device." (Emphasis added)

Independent claim 13 contains equivalent language.

Thus, while the present invention models an air mass flow in dependence upon an rpm of a compressor, Mufford seeks somewhat the reverse, namely to control the rpm of the compressor in

dependence upon a desired air mass flow. While Mufford also models the air mass flow, the air mass flow is modeled in dependence upon the fuel cell current (column 7, lines 37 to 39, and column 5, lines 25 to 27). Neither the rpm of the compressor, nor the compressor pressure ratio, the latter of which is notably not even mentioned by Mufford, take part in Mufford's modeling of the air mass flow.

Mufford's comparison of the measured air mass flow with the modeled air mass flow aims at setting an appropriate rpm of the compressor which allows the measured air mass flow to be adjusted to a pregiven air mass flow. Accordingly, the modeling of the air mass flow of Mufford serves to provide a desired value for the air mass flow. As a result of the appropriate adjustment of the rpm of the compressor, the actual value of the air mass flow is, via a controller, adjusted to the pregiven modeled desired value of the air mass flow.

Applicants have shown above that Mufford does not disclose all the elements of the claimed invention as required by an anticipation rejection.

In paragraphs 4 and 5, the Office rejected claims 3 to 8 under 35 U.S.C. §103(a) as being unpatentable over Mufford in view of the general knowledge in the art.

The deficiencies of Mufford have been outlined above. Applicants submit that those deficiencies are not cured by the general knowledge in the art.

In particular, applicants submit that Mufford, when combined with the general knowledge in the art, does not teach or suggest all the claim limitations as required for a prima facie case of

obviousness (MPEP §2142). Applicants further submit that there is no suggestion or motivation, either in Mufford or in the knowledge generally available to one of ordinary skill in the art, to modify Mufford to arrive at the claimed invention. Applicants also submit that there is no reasonable expectation of success.

Furthermore, applicants submit that applicants' invention is, in contrast to Mufford (see discussion on previous page), not directed to modeling a desired value for the air mass flow. Rather, applicants' invention is directed to modeling the air mass flow itself, that is, the actual value of the air mass flow. A comparison of the modeled air mass flow to the measured air mass flow measured by an air-mass measuring device as required by independent claims 1 and 13 makes a control of the air mass sensing unit possible, that is, a check on whether the air mass sensing unit provides correct measurements. Mufford does not describe such a check of the air mass sensing unit. In fact, such a check is not possible in Mufford since the actual value of the air mass flow is only measured not modeled. A modification of Mufford to model rather than just measure the air mass flow would change the principle of operation of Mufford, supporting that Mufford's teaching is not sufficient to render any of the claims of applicants' invention prima facie obvious (MPEP 2143.01).

Applicants have shown above that claims 1 and 13 are not anticipated by Mufford. Accordingly, these claims should be in

condition for allowance. Claims 2 and 9 to 12, which are directly or indirectly dependent on claim 1, should also be allowable. Applicants have also shown that claims 3 to 8 are not obvious in view of Mufford and the general knowledge in the art. Accordingly, these claims should also be allowable.

Reconsideration of the application is respectfully requested.

Respectfully submitted,

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